

Serial No.: 10/823,469
Filing Date.: 4/13/2004

Office Action Date: 4/2/2007
Amendment Date: 5/10/2007

III. AMENDMENTS TO THE DRAWINGS

None.

Serial No.: 10/823,469
Filing Date.: 4/13/2004

Office Action Date: 4/2/2007
Amendment Date: 5/10/2007

IV. REMARKS/ARGUMENTS

This is in response to the Advisory Action mailed 04/02/2007, with claims 1-13 and 17-22 pending in the application. By this amendment, claims 1 and 17 have been amended. No new matter has been added. Claims 1-13 and 17-22 remain in consideration.

The Advisory Action mailed 04/02/2007 indicated that Applicant's reply (mailed 03/02/2007) to the Final Office Action (mailed 01/10/2007) failed to place the application in condition for allowance. However, the Advisory Action did indicate that the reply overcame the 35 U.S.C. § 112, second paragraph rejections and that the amendments proposed in the reply were entered. And, the Advisory Action further indicated that claims 1-13 and 17-22 remain rejected. From this, Applicant is proceeding with the present submission based upon the rejections of the claims as substantively set forth in the Final Office Action mailed 01/10/2007 and as further set forth in the continuation sheet provided as part of the Advisory Action repeated herein immediately below.

Continuation of 13. Other. Applicant argues that paragraphs 0018 and 0023 and figure 3 provide sufficient supports for the amended portion "having a direct signal line". Paragraph 0023 states that signal line 162 is provided using hard-wire connection as oppose to a brake control bus. It is noticed that the buses 144 and 142 are illustrated the same way as line 162 in figure 3 of the instant application. Hence, it is concluded that the cited paragraphs and the illustrated line 162 do not provide sufficient supports for the amended portion "having a direct signal line" since the illustrations of a bus 144 and the argued direct line 162 are the same. For these reasons, the new matter rejection is maintained.

Applicant is somewhat confused by the immediately preceding choice of language. To wit, "*the new matter rejection is maintained.*" Applicant cannot identify any prior Action specifically referring to "*new matter rejection.*" Applicant believes that "*Continuation of 13*" passage above in the Advisory Action relates directly to the 35 U.S.C. § 112, first paragraph rejection of claims 1-13 and 17-22 recited in the Final Office Action. Therefore, the present submission is further provided with this understanding. If, in fact, the Advisory Action intended some other bases of claim rejection, Applicant respectfully requests additional clarification.

Serial No.: 10/823,469
Filing Date.: 4/13/2004

Office Action Date: 4/2/2007
Amendment Date: 5/10/2007

Claim Rejections – 35 U.S.C. § 112, first paragraph

Claims 1-13 and 17-22 stand rejected under 35 U.S.C. § 112, first paragraph. In the Final Office Action, it was stated that:

The claimed feature “a brake actuation module having a direct signal line to each of the first and second supervisory controllers and the monitoring controller” was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With more particularity, the Advisory Action focused on the recitation of “having a direct signal line” acknowledging that “paragraph [0023] of the specification states that signal line 162 is provided using hard-wire connection as oppose [*sic*] to a brake control bus.” The Advisory Action takes notice that figure 3 of the specification illustrates buses 144 and 142 in the same way as signal line 162 and concludes that

...the cited paragraphs and the illustrated line 162 do not provide sufficient supports [*sic*] for the amended portion “having a direct signal line” since the illustrations of a bus 144 and the argued direct line 162 are the same.

Applicant respectfully disagrees with this conclusion. Figure 3 is a schematic illustration (see paragraph [0012]). A schematic illustration is diagrammatic in nature and not intended to convey details with precision or particularity. The lines used to illustrate a bus and the lines used to illustrate a signal line will appear similar in a schematic illustration. Moreover, Figure 3 must be analyzed in conjunction with the remainder of the specification and not arbitrarily analyzed apart from the remainder of the specification. The buses and the signal lines presented in the various figures are adequately distinguished within the written portions of the specification such that one having ordinary skill in the art understands the differences regardless of the similarity in appearance of a schematic rendition. In essence, the lines are what we call them in the specification, for without such description, they are merely lines on the paper. Furthermore, the predecessor to the Federal Circuit has indicated:

...the description of the article pictured can be relied on, in combination with the drawings, for what they would reasonably teach one of ordinary skill in the art. *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977).

Serial No.: 10/823,469
Filing Date.: 4/13/2004

Office Action Date: 4/2/2007
Amendment Date: 5/10/2007

Nonetheless, Applicant notes that the Final Office Action stated that “[c]laims 1-13 and 17-22 are being treated as not having the amendment. This statement was in reference to the amendment to claims 1 and 17 set forth in Applicant’s reply mailed 03/02/2007 wherein the recitation “a brake actuation module having a direct signal line to each of the first and second supervisory controllers and the monitoring controller” underlying the 35 U.S.C. § 112, first paragraph rejection. Therefore, in a bona-fide effort to advance the substantive prosecution of the claims, Applicant has amended claims 1 and 17 thusly with respect to the portion of those claims relevant to the underlying the 35 U.S.C. § 112, first paragraph rejection in order that the amendments will now be treated as having been amended:

a brake actuation module having ~~a direct signal line~~ a non-bussed, hard-wired connection to each of the first and second supervisory controllers and the monitoring controller

Applicant points to at least paragraph [0023] of the written description in support thereof and to quell any lingering 35 U.S.C. § 112, first paragraph concerns. Relevant portions of paragraph [0023] are set forth for convenience immediately below:

It is preferred that the signal communication of both processed sensor signal 162 and raw sensor signals 164,166,168 be provided using hard-wire connections as opposed to a brake control bus or buses.

Claim Rejections 35 U.S.C. § 103(a)

Claims 1-12, 17, and 20-22 were rejected under 35 U.S.C. §103(a) as being unpatentable over applicant’s Figure 1 in view of *Kato*, et al. USPN 5,548,601. Claims 13, 18 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over applicant’s Figure 1 in view of *Kato*, et al. ‘601 and further in view of *Weiberle*, et al. U.S. 2003/0006726 A1.

Amended claim 1 sets forth a brake control system, comprising, *inter alia*, a first supervisory controller, a second supervisory controller, and a monitoring controller operatively connected a controller bus and adapted to monitor the performance of said first supervisory controller, said second supervisory controller, said first brake control bus, and

Serial No.: 10/823,469
Filing Date.: 4/13/2004

Office Action Date: 4/2/2007
Amendment Date: 5/10/2007

said second brake control bus. A brake actuation module has a non-bussed, hard-wired connection to each of the first and second supervisory controllers and the monitoring controller.

Applicant respectfully asserts that claim 1 is patentably distinguishable from *Kato*, et al. and applicant's Figure 1 because all elements of the invention are NOT disclosed in the prior art, as required under 35 U.S.C. § 102 and §103(a). Specifically neither reference teaches or describes a brake actuation module having a non-bussed, hard-wired connection to each of the first and second supervisory controllers and the monitoring controller.

The office action cited *Kato*, et al. to teach the concept of a monitoring controller 80, 85. *Kato*, et al. teaches two control units CPU1 and CPU2 having dummy output terminals Td1 and Td2 which are input to a watchdog circuit 85 and a dummy output comparator 80 (*See*, Col. 6, Lines 46-55, and Fig. 5). The dummy output comparator 80 detects a failure in the CPU1 and/or CPU2 when an exclusive OR circuit detects a disparity between the two dummy outputs. (*See*, Col. 7, Lines 27-33). The watchdog circuit 85 monitors processing times of the CPU1 and the CPU2. (*See*, Col. 7, Lines 40, et seq.). *Kato* neither teaches nor describes the purported monitoring controller of, i.e., the watchdog circuit 80 and the dummy output comparator 85, having as an input a non-bussed, hard-wired connection from a brake actuation module, as set forth in the recitation of claim 1:

a brake actuation module having a non-bussed, hard-wired connection to each of the first and second supervisory controllers and the monitoring controller

Thus, claim 1 is distinguishable over the cited prior art, and therefore allowable. Claims 2-13 all depend from independent claim 1, and claim additional limitations thereto, and are therefore allowable for that reason alone.

Amended claim 17 sets forth a brake control system, comprising, *inter alia*, a first supervisory controller, a second supervisory controller, and a monitoring controller operatively connected a controller bus and adapted to monitor the performance of said first supervisory controller, said second supervisory controller, said first brake control bus, and said second brake control bus. A brake actuation module has a non-bussed, hard-wired connection to each of the first and second supervisory controllers and the monitoring

Serial No.: 10/823,469
Filing Date: 4/13/2004

Office Action Date: 4/2/2007
Amendment Date: 5/10/2007

controller, and, the first and second supervisory controllers and the monitoring controller comprise substantially identically constructed control modules. Specifically, with reference to the claim language of *the first and second supervisory controllers and the monitoring controller comprise substantially identically constructed control module*, paragraph [0018] of the written description states:

Controllers 120,122,123 are preferably substantially identical in construction with respect to their associated control hardware and components, however, they may implement somewhat different control algorithms, for example, to provide a distinction between the application of the front and rear brakes in the case of supervisory controllers 120,122, respectively, and to provide the system and controller monitoring function in the case of monitoring controller 123.

Applicant respectfully asserts that claim 17 is patentably distinguishable from *Kato*, et al. and applicant's Figure 1 because all elements of the invention are NOT disclosed in the prior art, as required under 35 U.S.C. § 102 and §103(a).

The office action cited *Kato*, et al. to teach the concept of a monitoring controller 80, 85. *Kato*, et al. teaches two control units CPU1 and CPU2 having dummy output terminals Td1 and Td2 which are input to a watchdog circuit 85 and a dummy output comparator 80 (See, Col. 6, Lines 46-55, and Fig. 5). The dummy output comparator 80 detects a failure in the CPU1 and/or CPU2 when an exclusive OR circuit detects a disparity between the two dummy outputs. (See, Col. 7, Lines 27-33). The watchdog circuit 85 monitors processing times of the CPU1 and the CPU2. (See, Col. 7, Lines 40, et seq.). *Kato* neither teaches nor describes the purported monitoring controller of, i.e., the watchdog circuit 80 and the dummy output comparator 85, having as an input a non-bussed, hard-wired connection from a brake actuation module, as described above with respect to claim 17 of the instant invention. Furthermore, *Kato* neither teaches nor describes the purported monitoring controller of, i.e., the watchdog circuit 80 and the dummy output comparator 85 comprising a control module that is substantially identical in construction to the CPU1 and the CPU2 as described above with respect to claim 17 of the instant invention.

Thus, claim 17 is distinguishable over the cited prior art, and therefore allowable. Claims 18-22 all depend from independent claim 17, and claim additional limitations thereto, and are therefore allowable for that reason alone.

Serial No.: 10/823,469
Filing Date.: 4/13/2004

Office Action Date: 4/2/2007
Amendment Date: 5/10/2007

Additionally, claims 13, 18 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over applicant's Figure 1 in view of *Kato*, et al. '601 and further in view of *Weiberle*, et al. U.S. 2003/0006726 A1. Applicant respectfully traverses the Office Action's rejection of claim 13, over applicant's Figure 1 in view of *Kato*, et al. '601 and further in view of *Weiberle*, et al. U.S. 2003/0006726 A1. Claim 13, dependent upon now allowable claim 1, further claims the brake control system, comprising, *inter alia*, first, second, and third brake sensors, adapted to sense an operator input and provide first, second, and third unprocessed brake signals. The first supervisory controller is adapted to receive the first unprocessed brake signal and the processed brake signal and is adapted to control said first brake control unit pair in response thereto. The second supervisory controller is adapted to receive the second unprocessed brake signal and the processed brake signal and is adapted to control said second brake control unit pair in response thereto. The monitoring controller is adapted to receive the third unprocessed brake signal and the processed brake signal.

Applicant respectfully asserts that claims 13 and 18 are distinguishable over the prior art cited thereagainst, because the prior art, alone and in combination, fails to teach or describe the above elements of claims 13 and 18. *Weiberle* teaches an electrical brake system for a motor vehicle, including control module PM and axle control modules AMVA and AMHA or wheel modules RM1 and RM2 which communicate via communications system K, for controlling electro-mechanical or electro-hydraulic brake actuators. For determination of the driver's command, sensors S1 . . . Sn provide signal outputs from brake pedal BP to one of the control modules, to form the driver's operating braking command. (See, Para. 0028). This is depicted in each of Figs. 4, 5, and 6 with the controller labeled as 'AMVAPM'.

Applicant asserts that *Weiberle* neither teaches nor describes the first supervisory controller adapted to receive the first unprocessed brake signal and the processed brake signal and adapted to control said first brake control unit pair in response thereto, or the second supervisory controller adapted to receive the second unprocessed brake signal and the processed brake signal and adapted to control said second brake control unit pair in response thereto, or the monitoring controller adapted to receive the third unprocessed brake signal and the processed brake signal.

Thus, claims 13 and 18 are patentably distinguishable over the cited art, and therefore

Serial No.: 10/823,469
Filing Date.: 4/13/2004

Office Action Date: 4/2/2007
Amendment Date: 5/10/2007

allowable.

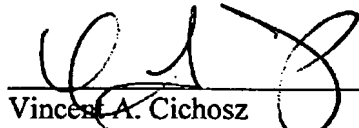
CONCLUSION

Applicant respectfully submits that the subject matter defined by claims 1-13 and 17-22 should now be in condition for allowance and that same be allowed to proceed to issue.

If the Examiner has any questions regarding the contents of the present changes, the applicants' attorney may be contacted at the phone number appearing below.

Any fees associated with this response may be charged to General Motors Deposit Account No. 07-0960.

Respectfully submitted,



Vincent A. Cichosz
Registration No. 35,844
CICHOSZ AND CICHOSZ PLLC
532 N. Main St.
Milford, MI 48381
(248) 676-2798
Attorney for Applicant